Development of a Neutral Wind and Temperature Instrument with Mass Spectrometry

Completed Technology Project (2017 - 2018)

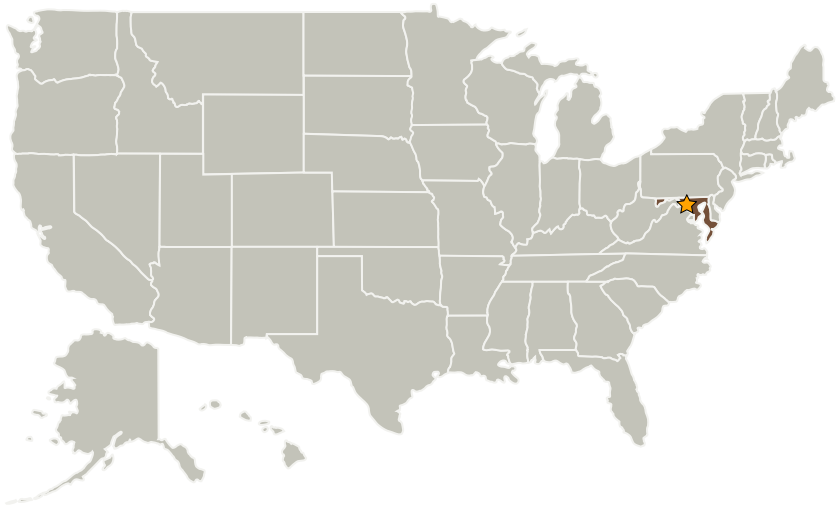
Project Introduction

Development of wind and temperature measurement achieved with a fine angular measurement of the particle velocity distribution function. This work utilizes prototype custom electronics to drive the next generation micro-shutter array (NGMSA) that will be used in conjunction with a slit aperture to determine the angle of incoming neutral particles.

Anticipated Benefits

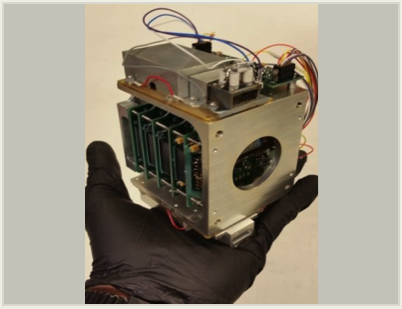
The success of this technology would provide the first in situ neutral wind measurement since the Dynamics Explorer missions over 30 years ago.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Goddard Space Flight Center(GSFC)	Lead Organization	NASA Center	Greenbelt, Maryland

Primary U.S. Work Locations
Maryland



Dellingr INMS

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Images

baseline instrument
Dellingr INMS
(https://techport.nasa.gov/image/28329)

Organizational Responsibility

Responsible Mission Directorate:

Mission Support Directorate (MSD)

Lead Center / Facility:

Goddard Space Flight Center (GSFC)

Responsible Program:

Center Independent Research & Development: GSFC IRAD

Project Management

Program Manager:

Peter M Hughes

Project Managers:

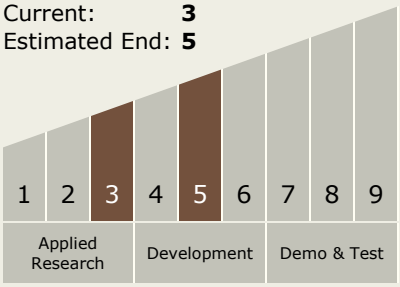
Nikolaos Paschalidis
Michael A Johnson

Principal Investigator:

Sarah L Jones

Technology Maturity (TRL)

Start: **3**
Current: **3**
Estimated End: **5**



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Technology Areas

Primary:

- TX08 Sensors and Instruments
  - TX08.3 In-Situ Instruments and Sensors
    - TX08.3.1 Field and Particle Detectors

Target Destination

Earth